

**Claims**

1. A filter unit (10) for filtering light, having a first mask (3) and a prism unit (7), characterized in that the first mask (3) exhibits a plurality of first apertures; that there is a second mask (8) having second apertures, the prism unit (7) being arranged between the two masks (3, 8); that the first mask (3) and the second mask (8) exhibit corresponding first and second apertures and form an aperture pair; and that there is a prism in the prism unit (7) for at least one aperture pair.

2. Filter unit (10) according to Claim 1, characterized in that for each first aperture in the first mask (3) there is at least one second aperture in the second mask (8).

3. Filter unit (10) according to Claim 1 or 2, characterized in that the first mask (3) is fixed relative to the prism unit (7) and the second mask (8), in relation to the first mask (3) or in relation to the prism unit (7), is displaceable substantially laterally with respect to the first mask (3) with the aid of at least one displacement unit (4, 6).

4. Filter unit (10) according to Claim 1 or 2, characterized in that the first mask (3) is fixed relative to the second mask (8) and the prism unit (7), in

relation to the first mask (3) or in relation to the second mask (8), is displaceable substantially laterally with respect to the second mask (8) with the aid of at least one displacement unit (4, 6).

5. Filter unit (10) according to Claim 3 or 4, characterized in that the at least one displacement unit (4, 6) is arranged to the side of the unit (7, 8) to be displaced.

6. Filter unit (10) according to one of Claims 3 to 5, characterized in that the at least one displacement unit (4, 6) comprises a piezounit.

7. Filter unit (10) according to one of Claims 3 to 5, characterized in that there are two displacement units (4, 6), one being a piezoelement and the other being a viscous spring element.

8. Filter unit (10) according to one of Claims 3 to 5, characterized in that the at least one displacement unit (4, 6) comprises a microstepper or a microlinear motor.

9. Filter unit (10) according to one of Claims 1 to 8, characterized in that the prism unit (7) is made of one or more of the following substances or materials:

- glass;
- crystalline NaCl;

- polymers;
- crystals;
- precious stones such as for example diamonds;
- quartzes;
- neodymium.

10. Filter unit (10) according to Claim 9, characterized in that individual prisms are ground or etched into the glass.

11. Filter unit (10) according to one of Claims 1 to 8, characterized in that the prism unit (7) is made of a polymer.

12. Filter unit (10) according to one of Claims 1 to 11, characterized in that the first mask and the second mask (3, 8) are slit masks or hole masks.

13. Filter unit (10) according to one of Claims 1 to 12, characterized in that the side walls of the slit masks forming the slits or the side walls of the hole masks forming the holes are conically shaped or in the shape of a truncated cone.

14. Filter unit (10) according to Claim 13, characterized in that the first mask (8) exhibits first apertures that are smaller on the side of the prism unit (7) than on the opposite side.

15. Filter unit (10) according to Claim 12 or 13, characterized in that the second mask (3) exhibits second apertures that are smaller on the side of the prism unit (7) than on the opposite side.

16. An arrangement having a filter unit (10) of one of Claims 1 to 15 and having a photosensitive layer (2), the photosensitive layer (2) being arranged adjacent to the second mask (3).

17. The arrangement of Claim 16, characterized in that the photosensitive layer (2) comprises one or more phototransistors or one or more image sensors.

18. The arrangement of Claim 17, characterized in that the photosensitive layer (2) comprises an image sensor of the CCD (charge-coupled device) type.

19. An apparatus for acquiring images, characterized in that there are a first mask (3) having first apertures, a prism unit (7) and a photosensitive layer (2), the prism unit (7) being arranged between the first mask (3) and the photosensitive layer (2), and that the photosensitive layer (2) comprehends at least three regions in which the incident light is measurable, the light falling on the at least three regions originating from the same first aperture.

20. Apparatus according to Claim 19, characterized in that red light is measurable in a first region, green light in a second region, and blue light in a third region.

21. Apparatus according to Claim 19 or 20, characterized in that the first mask (3) is of the hole mask type.

22. Apparatus according to one of Claims 19 to 21, characterized in that light is measurable in a further region into which ultraviolet light falls.

23. Apparatus according to one of Claims 19 to 22, characterized in that light is measurable in a further region into which infrared light falls.

24. Apparatus according to one of Claims 19 to 23, characterized in that the side walls of the hole masks forming the holes form a truncated cone.

25. Apparatus according to Claim 24, characterized in that the first mask (8) exhibits first apertures that are smaller on the side of the prism unit (7) than on the opposite side.